



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,294	04/19/2004	Naoko Ito	8046-1017-1	1316
<div>466 7590 07/16/2010</div> <div>YOUNG &amp; THOMPSON</div> <div>209 Madison Street</div> <div>Suite 500</div> <div>Alexandria, VA 22314</div>				
<div>EXAMINER</div> <div>GORTAYO, DANGELINO</div>				
<div>ART UNIT</div> <div>2168</div>		<div>PAPER NUMBER</div>		
<div>NOTIFICATION DATE</div> <div>07/16/2010</div>		<div>DELIVERY MODE</div> <div>ELECTRONIC</div>		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

DocketingDept@young-thompson.com

# Office Action Summary

**Application No.**

10/826,294

**Applicant(s)**

ITO ET AL.

**Examiner**

DANGELINO N. GORTAYO

**Art Unit**

2168

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 May 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 17-30, 47, 51-53, 55, 56, 58, 59 and 61-63 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 17-30, 47, 51-53, 55-56, 58-59 and 61-63 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/3/2010 has been entered.

### ***Response to Amendment***

2. In the amendment filed on 5/3/2010, claims 17-19, 23-24, 29-30, 47, 51-53, 58-59 and 61-63 have been amended. The currently pending claims considered below are claims 17-30, 47, 51-53, 55-56, 58-59 and 61-63.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 17-30, 47, 51-53, 55-56, 58-59 and 61-63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jeyaraman (US Patent 6,377,957 B1) in view of Benson et al. (US Patent 6,202,085 B1)

**As per claim 17, Jeyaraman** teaches "A structured document processing system" (see Abstract)

"comprising: a network composed of a server device and a plurality of client devices," (Figure 1, Figure 2, column 4 lines 18-38, wherein a system containing a server and a plurality of client devices is disclosed)

"the server device storing a structured document composed of a plurality of elements" (column 3 lines 23-35, column 4 lines 53-65, wherein a server coupled to a document database containing documents is disclosed) "composed of a plurality of elements which are hierarchically organized in a tree structure" (column 4 lines 6-17, wherein documents stored in a document database are tree-structured) "wherein each of the elements is a constituent unit of the structured document and has a node tree structure having a tag node as its top node, wherein predetermined ones of the tag node are provided with a transfer object flag," (Figure 6A, column 5 lines 32-67, column 7 lines 26-40, column 8 lines 13-25, wherein data stored in a database are in a tree hierarchy to represent parts of a document, including a root node indicating the difference)

"the server device comprising an update manager for managing an update of the structured document using only a single updated minimum element which is a tree structured portion of the structured document, wherein a top node of the single updated minimum element is provided with the transfer object flag, wherein the single updated minimum element has a minimum node tree, includes a plurality of updated portions of the structured document, and is determined by referring to its transfer object flag,"

(Figure 3 reference 310, 312, Figure 4 reference 406, 408, column 5 lines 33-67, column 6 line 51 – column 7 line 9, column 7 line 26 – column 8 line 11, column 9 lines 31-64, column 13 lines 19-37, wherein the difference between the updated copy and the original copy is found in the server, indicating the necessary changes, and the update to specify manipulation of nodes using the tags of the nodes is created, composed of differences and node information from portions of the tree structured document)

“and a transmission section that identifies for transmission the single updated minimum element based on a location of the transfer object flag within the tree structure and transmits the identified single updated minimum element to one of the client devices.” (Figure 3 reference 314, Figure 4 reference 410, column 5 lines 33-54, column 6 lines 16-23, column 7 lines 10-14, lines 26-67, column 8 line 38 - column 9 line 40, wherein the change commands identifying specific nodes are sent to clients by the server to update cached copies of a document)

“wherein each of the client devices replaces a corresponding tree-structured minimum element of the structured document currently stored in the client device with the identified updated tree-structured minimum element received from the server (column 5 lines 33-54, column 6 lines 10-23, lines 44-57, column 7 lines 10-18, column 7 line 25 – column 8 line 11, column 13 lines 19-37, wherein aggregate changes update containing portions to be updated to be utilized by a client to update data are sent to a client for transformation)

Jeyaraman teaches that the system can check if a client contains a copy of a document (column 5 lines 26-35). Jeyaraman does not explicitly teach “each of the

client devices stores a duplication of the structured document". Benson teaches "each of the client devices stores a duplication of the structured document" (column 13 lines 31-56, wherein a local copy of a document is stored by a data replication system). It would have been obvious at the time of the invention for one of ordinary skill in the art to combine Jeyaraman's system of propagating document updates to clients with Benson's method of synchronizing exact copies of data from sources to synchronizing clients without having to check if a copy is contained in a client. This would give the user the advantage of improving access time and performance by eliminating a step in the process of propagating changes to a document in a network. The motivation for doing so would be to provide a generalized synchronization model. (Benson, column 3 lines 39-48)

**As per claim 18,** Jeyaraman teaches "the update manager instructs the transmission section to transmit the single updated minimum element of the structured document when the structured document has been updated. (column 7 lines 19-24)

**As per claim 19,** Jeyaraman teaches "the update manager instructs the transmission section to transmit update information to one of the client devices when the structured document has been updated, the update information including identification information identifying the single updated minimum element of the structured document" (column 7 lines 50-67)

**As per claim 20,** Jeyaraman teaches "the update manager manages the update of the structured document using an update time at which the update of the structured document occurs, wherein, when an update occurs at the node, the update manager

instructing the transmission section to transmit update information to a client device, the update information including the update time." (column 5 lines 33-37, lines 48-54, column 7 lines 19-24)

**As per claim 21, Jeyaraman** teaches "when a client device receives the update information from the server device, the client device updates the structured document stored therein based on the update information received. " (column 6 lines 17-23, column 7 lines 10-18)

**As per claim 22, Jeyaraman** teaches "each of the client devices comprises: a comparator for comparing the update time of the update information received is later than an updated time of the structured document currently stored therein;" (column 5 lines 33-38)

"and a transmission controller for requesting transfer of an updated minimum element of the structured document when the update time of the update information received is later than the updated time of the structured document currently stored therein." (column 5 lines 33-54)

**As per claim 23, Jeyaraman** teaches "the update manager transmits the single updated minimum element of the structured document to a client device at a plurality of predetermined times." (column 7 lines 19-24)

**As per claim 24, Jeyaraman** teaches "the update manager transmits update information to the client device at a plurality of predetermined times, the update information including identification information identifying the single updated minimum element of the structured document." (column 5 lines 48-54, column 7 lines 19-24)

**As per claim 25, Jeyaraman** teaches “the update manager manages the update of the structured document using an update time at which the update of the structured document occurs, the update information further includes the update time.” (column 5 lines 48-54, column 7 lines 19-24)

**As per claim 26, Jeyaraman** teaches “a gateway server device performing protocol processing between the server device and each of the client devices,” (Figure 2 reference 204 and column 4 lines 18-65)

“wherein the server device transmits update information indicating that the structured document is updated to the gateway server device,” (column 4 line 66 – column 5 line 16, column 6 lines 43-57)

“wherein the gateway server device comprises: an structured document manager for managing the duplication of the structured document stored in the client device;” (column 7 lines 4-24)

“an update information receiver for receiving update information from the server device;” (column 3 lines 59 – column 4 line 18, column 4 lines 18-46)

“and an update controller for transmitting the update information received from the server device to the client device.” (column 4 line 53 – column 5 line 17)

**As per claim 27, Jeyaraman** teaches “the update controller transmits the update information received from the server device to the client device at a plurality of predetermined times.” (column 7 lines 19-24)

**As per claim 28, Jeyaraman** teaches “when a client device receives the update information from the gateway server device, the client device updates the duplication of

the structured document stored therein based on the update information received.”  
(column 6 lines 16-27, column 7 lines 10-24)

**As per claim 29, Jeyaraman** teaches “each of the client devices comprises: a comparator for comparing the update time of the update information received is later than an updated time of the structured document currently stored therein;” (column 5 lines 33-38)

“and a transmission controller for requesting transfer of the single updated minimum element of the structured document when the update time of the update information received is later than the updated time of the structured document currently stored therein.” (column 5 lines 33-54)

**As per claim 30, Jeyaraman** teaches “a gateway server device performing protocol processing between the server device and each of the client devices,” (Figure 2 reference 204 and column 4 lines 18-65)

“wherein the server device transmits update information including an update time and the single updated minimum element to the gateway server device,” (column 4 line 66 – column 5 line 16, column 6 lines 43-57)

“wherein the gateway server device comprises: an structured document storage for storing the duplication of the structured document stored in the client device;”  
(column 3 line 61 – column 4 line 52)

“an structured document manager for managing the duplication of the structured document for the client device and an update time thereof;” (column 7 lines 4-24)

"an update information receiver for receiving the update information from the server device; and an update controller for transmitting the updated minimum element of the structured document to a client device having the update time of the structured document stored therein, which is later than the update time included in the update information received from the server device." (column 3 lines 59 – column 4 line 18, column 4 lines 18-46)

**As per claim 47, Jeyaraman teaches "A structured document updating method"** (see Abstract) "in a network composed of a server device and a plurality of client devices," (Figure 1, Figure 2, column 4 lines 18-38, wherein a system containing a server and a plurality of client devices is disclosed)

"the server device storing a structured document" (column 3 lines 23-35, column 4 lines 53-65, wherein a server coupled to a document database containing documents is disclosed) "composed of a plurality of nodes which are hierarchically organized in a tree structure, (column 4 lines 6-17, wherein documents stored in a document database are tree-structured) "wherein each of the nodes is a constituent unit of the structured document and has a node tree structure having a tag node as its top node, wherein predetermined ones of the tag node are provided with a transfer object flag," (Figure 6A, column 5 lines 32-67, column 7 lines 26-40, column 8 lines 13-25, wherein data stored in a database are in a tree hierarchy to represent parts of a document, including a root node indicating the difference)

the method comprising the steps of: at the server device, a) managing an update of the structured document composed of the plurality of nodes which are hierarchically organized in the tree structure using only a single updated minimum element which is a tree-structured portion of the structured document, wherein a top node of the single updated minimum element is provided with the transfer object flag, wherein the single updated minimum element has a minimum node tree structure, includes a plurality of updated portions of the structured document, and is determined by referring to its transfer object flag;" (Figure 3 reference 310, 312, Figure 4 reference 406, 408, column 5 lines 33-67, column 6 line 51 – column 7 line 9, column 7 line 26 – column 8 line 11, column 9 lines 31-64, column 13 lines 19-37, wherein the difference between the updated copy and the original copy is found in the server, indicating the necessary changes, and the update to specify manipulation of nodes using the tags of the nodes is created, composed of differences and node information from portions of the tree structured document)

"and b) identifying for transmission the single updated minimum element based on a location of the transfer object flag within the tree structure and transmitting the identified single updated minimum element to the client device, and at a client device receiving the identified single updated minimum element." (Figure 3 reference 314, Figure 4 reference 410, column 5 lines 33-54, column 6 lines 16-23, column 7 lines 10-14, lines 26-67, column 8 line 38 - column 9 line 40, wherein the change commands identifying specific nodes are sent to clients by the server to update cached copies of a document)

c) replacing a corresponding tree-structured minimum element of the structured document currently stored in the client device with the identified single updated tree-structured minimum element received from the server. (column 5 lines 33-54, column 6 lines 10-23, lines 44-57, column 7 lines 10-18, column 7 line 25 – column 8 line 11, column 13 lines 19-37, wherein aggregate changes update containing portions to be updated to be utilized by a client to update data are sent to a client for transformation)

Jeyaraman teaches that the system can check if a client contains a copy of a document (column 5 lines 26-35). Jeyaraman does not explicitly teach "each of the client devices stores a duplication of the structured document". Benson teaches "each of the client devices stores a duplication of the structured document" (column 13 lines 31-56, wherein a local copy of a document is stored by a data replication system). It would have been obvious at the time of the invention for one of ordinary skill in the art to combine Jeyaraman's system of propagating document updates to clients with Benson's method of synchronizing exact copies of data from sources to synchronizing clients without having to check if a copy is contained in a client. This would give the user the advantage of improving access time and performance by eliminating a step in the process of propagating changes to a document in a network. The motivation for doing so would be to provide a generalized synchronization model. (Benson, column 3 lines 39-48)

**As per claim 51**, Jeyaraman teaches "wherein step (b) includes transmitting update time information and the step (c) comprises the steps of: when the update time of the update time information received is later than an updated time of the structured

document currently stored therein, requesting transfer of the single updated minimum element of the structured document.” (column 5 lines 33-54, column 6 lines 10-23, lines 44-57, column 7 lines 10-18)

**As per claim 52, Jeyaraman** teaches “an updated element is transmitted to the client devices at a plurality of predetermined times.” (column 7 lines 19-24)

**As per claim 53, Jeyaraman** teaches “update information is transmitted to the client devices at a plurality of predetermined times, the update information including identification information identifying the single updated minimum element.” (column 5 lines 48-54, column 7 lines 19-24)

**As per claim 55, Jeyaraman** teaches “the network further comprises a gateway server device performing protocol processing between the server device and each of the client devices,” (Figure 2 reference 204 and column 4 lines 18-65)

“the method further comprising the steps of: at the gateway server device, d) managing the structured document stored in each of the client devices;” (column 7 lines 4-24)

“e) receiving an update information from the server device;” (column 3 lines 59 – column 4 line 18, column 4 lines 18-46)

“and f) transmitting the update information received from the server device to a client device.” (column 4 line 53 – column 5 line 17)

**As per claim 56, Jeyaraman** teaches “in the step (f), the update information received from the server device is transmitted to the client device at a plurality of predetermined times.” (column 7 lines 19-24)

**As per claim 58, Jeyaraman** teaches “wherein the step (b) includes transmitting update time information, and further comprising the steps of: at the client device, when the update time of the update time information received is later than an updated time of the structured document currently stored therein, using the identification information to request transfer of the single updated minimum element from the gateway server device.” (column 5 lines 33-54, column 6 lines 10-23, lines 44-57, column 7 lines 10-18)

**As per claim 59, Jeyaraman** teaches “the network further comprises a gateway server device performing protocol processing between the server device and each of the client devices,” (Figure 2 reference 204 and column 4 lines 18-65)

“the method further comprising the steps of: at the gateway server device, storing the structured document stored in each of the client devices in an information storage;” (column 3 line 61 – column 4 line 52)

“managing the structured document for each of the client devices and an update time thereof;” (column 7 lines 4-24)

“receiving an update information from the server device at which an update of the structured document occurs;” (column 3 lines 59 – column 4 line 18, column 4 lines 18-46)

“selecting a client device having the update time of the structured document stored therein, which is later than the update time included in the update information received from the server device;” (column 4 line 66 – column 5 line 16, column 6 lines 43-57)

"and transmitting the single updated minimum element identified by the identification information included in the update information received from the server device, to the selected client device." (column 4 line 53 – column 5 line 17)

**As per claim 61, Jeyaraman** teaches "A storage medium storing a computer program for updating a structured document in a network" (see Abstract)

"composed of a server device and a plurality of client devices," (Figure 1, Figure 2, column 4 lines 18-38, wherein a system containing a server and a plurality of client devices is disclosed)

"the server device storing a structured document" (column 3 lines 23-35, column 4 lines 53-65, wherein a server coupled to a document database containing documents is disclosed) "composed of a plurality of nodes which are hierarchically organized in a tree structure," (column 4 lines 6-17, wherein documents stored in a document database are tree-structured) "wherein each of the nodes is a constituent unit of the structured document and has a node tree structure having a tag node as its top node, wherein predetermined ones of the tag node are provided with a transfer object flag," (Figure 6A, column 5 lines 32-67, column 7 lines 26-40, column 8 lines 13-25, wherein data stored in a database are in a tree hierarchy to represent parts of a document, including a root node indicating the difference)

"the computer program at the server device comprising the steps of: a) managing an update of the structured document composed of the plurality of nodes which are hierarchically organized in the tree structure using only a single updated minimum

element which is a tree-structure portion of the structured document, wherein a top node of the single updated minimum element is provided with the transfer object flag, wherein the single updated minimum element has a minimum node tree structure, includes a plurality of updated portions of the structured document, and is determined by referring to its transfer object flag;"(Figure 3 reference 310, 312, Figure 4 reference 406, 408, column 5 lines 33-67, column 6 line 51 – column 7 line 9, column 7 line 26 – column 8 line 11, column 9 lines 31-64, column 13 lines 19-37, wherein the difference between the updated copy and the original copy is found in the server, indicating the necessary changes, and the update to specify manipulation of nodes using the tags of the nodes is created, composed of differences and node information from portions of the tree structured document)

"identifying for transmission the single updated minimum element based on a location of the transfer object flag within the tree structure and transmitting the identified single updated minimum element to the client devices." (Figure 3 reference 314, Figure 4 reference 410, column 5 lines 33-54, column 6 lines 16-23, column 7 lines 10-14, lines 26-67, column 8 line 38 - column 9 line 40, wherein the change commands identifying specific nodes are sent to clients by the server to update cached copies of a document)

"wherein each of the client devices replaces a corresponding tree-structured minimum element of the structured document currently stored in the client device with the identified updated tree-structured minimum element received from the server." (column 5 lines 33-54, column 6 lines 10-23, lines 44-57, column 7 lines 10-18, column 7 line 25 – column 8 line 11, column 13 lines 19-37, wherein aggregate changes update

containing portions to be updated to be utilized by a client to update data are sent to a client for transformation)

Jeyaraman teaches that the system can check if a client contains a copy of a document (column 5 lines 26-35). Jeyaraman does not explicitly teach "each of the client devices stores a duplication of the structured document". Benson teaches "each of the client devices stores a duplication of the structured document" (column 13 lines 31-56, wherein a local copy of a document is stored by a data replication system). It would have been obvious at the time of the invention for one of ordinary skill in the art to combine Jeyaraman's system of propagating document updates to clients with Benson's method of synchronizing exact copies of data from sources to synchronizing clients without having to check if a copy is contained in a client. This would give the user the advantage of improving access time and performance by eliminating a step in the process of propagating changes to a document in a network. The motivation for doing so would be to provide a generalized synchronization model. (Benson, column 3 lines 39-48)

**As per claim 62, Jeyaraman teaches "A server device in a structured document processing system comprising a plurality of client devices," (see Abstract)**

"the server device storing a structured document composed of a plurality of nodes" (column 3 lines 23-35, column 4 lines 53-65, wherein a server coupled to a document database containing documents is disclosed) "composed of a plurality of nodes which are hierarchically organized in a tree structure" (column 4 lines 6-17,

wherein documents stored in a document database are tree-structured) “wherein each of the elements is a constituent unit of the structured document and has a node tree structure having a tag node as its top node, wherein predetermined ones of the tag node are provided with a transfer object flag,” (Figure 6A, column 5 lines 32-67, column 7 lines 26-40, column 8 lines 13-25, wherein data stored in a database are in a tree hierarchy to represent parts of a document, including a root node indicating the difference)

“the server device comprising an update manager for managing an update of the structured document using only a single updated minimum element which is a tree-structured portion of the structured document, wherein a top node of the single updated minimum element is provided with the transfer object flag, wherein the single updated minimum element has a minimum node tree structure, includes a plurality of updated portions, and is determined by referring to its transfer object flag,” (Figure 3 reference 310, 312, Figure 4 reference 406, 408, column 5 lines 33-67, column 6 line 51 – column 7 line 9, column 7 line 26 – column 8 line 11, column 9 lines 31-64, column 13 lines 19-37, wherein the difference between the updated copy and the original copy is found in the server, indicating the necessary changes, and the update to specify manipulation of nodes using the tags of the nodes is created, composed of differences and node information from portions of the tree structured document)

“and a transmission section that identifies for transmission the single updated minimum element based on a location of the transfer object flag within the tree structure and transmits the identified single updated minimum element to one of the client

devices." (Figure 3 reference 314, Figure 4 reference 410, column 5 lines 33-54, column 6 lines 16-23, column 7 lines 10-14, lines 26-67, column 8 line 38 - column 9 line 40, wherein the change commands identifying specific nodes are sent to clients by the server to update cached copies of a document)

"wherein each of the client devices replaces a corresponding tree-structured minimum element of the structured document currently stored in the client device with the identified single updated tree-structured minimum element received from the server." (column 5 lines 33-54, column 6 lines 10-23, lines 44-57, column 7 lines 10-18, column 7 line 25 – column 8 line 11, column 13 lines 19-37, wherein aggregate changes update containing portions to be updated to be utilized by a client to update data are sent to a client for transformation)

Jeyaraman teaches that the system can check if a client contains a copy of a document (column 5 lines 26-35). Jeyaraman does not explicitly teach "each of the client devices stores a duplication of the structured document". Benson teaches "each of the client devices stores a duplication of the structured document" (column 13 lines 31-56, wherein a local copy of a document is stored by a data replication system). It would have been obvious at the time of the invention for one of ordinary skill in the art to combine Jeyaraman's system of propagating document updates to clients with Benson's method of synchronizing exact copies of data from sources to synchronizing clients without having to check if a copy is contained in a client. This would give the user the advantage of improving access time and performance by eliminating a step in the process of propagating changes to a document in a network. The motivation for doing

so would be to provide a generalized synchronization model. (Benson, column 3 lines 39-48)

**As per claim 63, Jeyaraman** teaches "A client device in a structured document processing system" (see Abstract, Figure 1, Figure 2, column 4 lines 18-38, wherein a system containing a server and a plurality of client devices is disclosed)

"comprising a server device that stores a structured document" (column 3 lines 23-35, column 4 lines 53-65, wherein a server coupled to a document database containing documents is disclosed) "composed of a plurality of nodes which are hierarchically organized in a tree structure, (column 4 lines 6-17, wherein documents stored in a document database are tree-structured) "wherein each of the nodes is a constituent unit of the structured document and has a node tree structure having a tag node as its top node, wherein predetermined ones of the tag node are provided with a transfer object flag," (Figure 6A, column 5 lines 32-67, column 7 lines 26-40, column 8 lines 13-25, wherein data stored in a database are in a tree hierarchy to represent parts of a document, including a root node indicating the difference)

"wherein the server device manages an update of the structured document using only a single updated minimum element which is a tree-structured portion of the structured document, the updated minimum element including an updated tree-structured portion of the structured document wherein a top node of the single updated minimum element is provided with the transfer object flag and update time information, wherein the single updated minimum element has a minimum node tree structure,

includes a plurality of updated portions, and is determined by referring to its transfer object flag,” (Figure 3 reference 310, 312, Figure 4 reference 406, 408, column 5 lines 33-67, column 6 line 51 – column 7 line 9, column 7 line 26 – column 8 line 11, column 9 lines 31-64, column 13 lines 19-37, wherein the difference between the updated copy and the original copy is found in the server, indicating the necessary changes, and the update to specify manipulation of nodes using the tags of the nodes is created, composed of differences and node information from portions of the tree structured document)

“and wherein the server device identifies for transmission the single updated minimum element based on a location of the transfer object flag within the tree structure and transmits the identified single updated minimum element and its update time information to the client device.” (Figure 3 reference 314, Figure 4 reference 410, column 5 lines 33-54, column 6 lines 16-23, column 7 lines 10-14, lines 26-67, column 8 line 38 - column 9 line 40, wherein the change commands identifying specific nodes are sent to clients by the server to update cached copies of a document)

“wherein each of the client devices replaces a corresponding tree-structured minimum element of the structured document currently stored in the client device with the identified single updated tree-structured minimum element received from the server.” (column 5 lines 33-54, column 6 lines 10-23, lines 44-57, column 7 lines 10-18, column 7 line 25 – column 8 line 11, column 13 lines 19-37, wherein aggregate changes update containing portions to be updated to be utilized by a client to update data are sent to a client for transformation)

"the client device comprising: a comparator for comparing the update time of the update time information received from the server device and a last update time of the structured document currently stored therein to determine whether the update time of the update time information is later than the last update time;" (column 5 lines 33-54, column 6 lines 10-23, lines 44-57, column 7 lines 10-18, wherein a time stamp is sent along with aggregate changes update to be utilized by a client to update data)

"and a transmission controller for requesting transfer of the single updated minimum element of the structured document when the update time of the update information received is later than the updated time of the structured document currently stored therein." (Figure 3 reference 314, Figure 4 reference 410, column 5 lines 33-54, column 6 lines 16-23, wherein an update request and the change commands identifying specific nodes are sent to clients by the server to update cached copies of a document)

Jeyaraman teaches that the system can check if a client contains a copy of a document (column 5 lines 26-35). Jeyaraman does not explicitly teach "each of the client devices stores a duplication of the structured document". Benson teaches "each of the client devices stores a duplication of the structured document" (column 13 lines 31-56, wherein a local copy of a document is stored by a data replication system). It would have been obvious at the time of the invention for one of ordinary skill in the art to combine Jeyaraman's system of propagating document updates to clients with Benson's method of synchronizing exact copies of data from sources to synchronizing clients without having to check if a copy is contained in a client. This would give the user the advantage of improving access time and performance by eliminating a step in the

process of propagating changes to a document in a network. The motivation for doing so would be to provide a generalized synchronization model. (Benson, column 3 lines 39-48)

### ***Response to Arguments***

5. Applicant's arguments, see page 16, filed 5/3/2010, with respect to the rejection of claims 17-30, 47, 51-53, 55-56, 58-59 and 61-63 in regards to 35 USC 103(a) have been fully considered but they are not persuasive.

a. Examiner is entitled to give claim limitations their broadest reasonable interpretation in light of the specification. See MPEP 2111 [R-I]

#### **Interpretation of Claims-Broadest Reasonable Interpretation**

During patent examination, the pending claims must be 'given the broadest reasonable interpretation consistent with the specification.' Applicant always has the opportunity to amend the claims during prosecution and broad interpretation by the examiner reduces the possibility that the claim, once issued, will be interpreted more broadly than is justified. In re Prater, 162 USPQ 541,550-51 (CCPA 1969).

b. Applicant's arguments is stated as Jeyaraman in view of Benson does not teach that the update manager uses only a single updated minimum element which is a tree-structured portion of the structured document, where the single updated minimum element includes a plurality of updated portions.

In regards to the argument, examiner respectfully disagrees. As disclosed in the above rejection, Jeyaraman, discloses a method to send the changes made in hierarchically structured data composed of nodes in a tree organization between clients containing cached copies and a document server, and not a complete copy of the data (column 2 lines 2-24). In particular, the update is disclosed in column 5 lines 33-54 of Jeyaraman to be the differences between the data copies, composed of node information and relevant operations for a transformation. The update showing differences between copies of files is collected in a single specific update, shown to be a single file sent from a server to a client, as shown in Figure 1 reference 122. The single update is determined by analysis of difference between the copy of the data in a client and in a database, wherein the differences are collected in a single update file. The method to determine the difference between a copy of data in a client and a database is disclosed in column 7 line 26 - column 8 line 11, wherein the update process begins at the children node to determine differences between documents, then ascends up the tree to find the nodes containing differences in documents until the root of the tree is reached, at which point the update is created to transform a tree from an older copy to an updated copy. This is accomplished by comparing the nodes and tracking node information representing portions of a structured document that require updating, due to a detected difference. The update is disclosed in column 13 lines 19-37, wherein the update is disclosed to be node information for portions of the tree-structured

document requiring update, as well as the transformation needed to update a tree-structured document. The node information in the update represents portions in the tree structured document where a difference is detected, for transformation. After all the differences are collected, including the ability to include specific operations that manipulate nodes within the data to show differences, the differences can then be utilized to construct the update. Thus, the update sent by the prior art of Jeyaraman is composed of a tree-structured portion of the document, as the nodes in the update represent portions of the tree-structured documents requiring an update, as well as operations necessary for the cached copies stored in a client to be updated, and not complete copies of the documents themselves. With the documents represented by trees, the update is created to transform an original document composed of node tree to an updated version of the document through an update containing nodes that are portions of the tree-structured documents requiring an update, as well as transformation steps to update the tree-structured document. As interpreted by the Examiner, the update (Figure 1 reference 122) is a specific file that contains differences between copies of a file in two different locations, to be able to update information with data representing the differences, including operations to manipulate the nodes for updating, without having to send whole copies of data between a client and a server. The update of Jeyaraman represents differences between data from a database and a cached copy of the data on a client, and is represents differences and changes between copies of data, not complete copies

of data themselves. The update is further shown to be composed of a plurality of updated portions that are different between copies of data, as well as manipulation operations to update data without the need to transfer complete copies of data between a database and a client. Therefore, Jeyaraman in view of Benson teaches that the update manager uses only a single updated minimum element which is a tree-structured portion of the structured document, where the single updated minimum element includes a plurality of updated portions.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Attaluri et al. (US Patent 5,897,634 A)

Aoyama et al. (US Patent 6,098,071 A)

Wanderski (US Patent 6,147,687 A)

Lee et al. (US Patent 7,031,956 B1)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANGELINO N. GORTAYO whose telephone number is (571)272-7204. The examiner can normally be reached on M-F 7:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim T. Vo can be reached on (571)272-3642. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dangelino N Gortayo/  
Examiner, Art Unit 2168

Dangelino N. Gortayo  
Examiner

/Tim T. Vo/  
Supervisory Patent Examiner, Art  
Unit 2168

Tim T. Vo  
SPE